Specifications

Quantum® Elite Series

NOTE: The Quantum Elite 615 has 15 slots for factory-installed input or output cards, and the Quantum Elite 408 has 8. Each slot can accommodate up to 12 S-video or composite video inputs, 2 analog RGB or component video inputs, 2 DVI inputs, 2 HDMI inputs, 2 3G/HD/SD-SDI inputs, 2 RGB or DVI outputs, or 2 HDMI outputs.

Video input — composite and S-video — QEC I12VID

Number/signal type	12 S-video, composite video
Connectors	2 female 26-pin HD (included adapter allows input on 24 female BNC connectors)
Nominal level	1 Vp-p for Y of S-video and for composite video 0.3 Vp-p for C of S-video
Minimum/maximum levels	Analog: 0.1 V to 2.0 Vp-p with no offset
Impedance	75 ohms
Horizontal frequency	15 kHz
Vertical frequency	50 Hz, 59.94 Hz

Video processing — QEC I12VID

Digital sampling	8 bits per color; 13.5 MHz standard
Colors	16.78 million

Sync — QEC I12VID

Standards	NTSC 3.58, NTSC 4.43, PAL, SECAM

Video input — QEC I2RGB

Number/signal type	2 analog VGA-WUXGA RGBHV, RGsB, HDTV, component video
Connectors	2 female 15-pin HD
Nominal level	1 Vp-p for Y of component video and for G of RGsB 0.7 Vp-p for RGB and for Pr and Pb of component video
Minimum/maximum levels	Analog: 0.3 V to 2.0 Vp-p with no offset
Impedance	75 ohms
Horizontal frequency	15 kHz to 100 kHz
Vertical frequency	50 Hz to 75 Hz
Resolution range	640x480 to 1920x1200, NTSC, PAL, 480p, 576p, 720p, 1080i, 1080p

Video processing — QEC I2RGB

Digital sampling	24 bit, 8 bits per color; 205 MHz standard (RGB, component video)
Colors	16.78 million

Sync — QEC I2RGB

Input type	RGBHV, RGsB, bi-level or tri-level component video
Input level	2.75 V to 5.0 Vp-p for RGBHV 0.6 Vp-p for component video tri-level sync 0.3 Vp-p for component video bi-level sync or RGsB
Impedance	2.2k ohms for H and V
Max. input voltage	5 Vp-p
Polarity	Positive or negative

Video input — QEC I2DVI

Number/signal type	2 digital VGA-WUXGA RGB single link DVI
Connectors	2 female DVI-I (analog signals are not supported)
Horizontal frequency	31 kHz to 100 kHz
Vertical frequency	24 Hz to 85 Hz
Resolution range	640x480 to 1920x1200, 480p, 576p, 720p, 1080i, or 1080p
Formats	RGB digital video
Standards	DVI 1.0

Video processing — QEC I2DVI

Maximum data rate	4.95 Gbps (1.65 Gbps per color)
Digital sampling	24 bit, 8 bits per color; 165 MHz standard (RGB)
Colors	16.78 million

Video input — QEC I2HDMI

NOTE: *Appropriate HDMI to DVI cables or adapters are required for DVI signal input/output.

Number/signal type	2 single link HDMI (or DVI*)
Connectors	2 female HDMI type A (analog signals are not supported)
Signal type	Single link HDMI (or DVI*)
Digital video	RGB digital video (DVI and HDMI standards) or Y, Cr, Cb digital component video (HDMI standard)
EDID and DDC	Supports Extended Display Identification Data (EDID) and Display Data Channel (DDC) data using DVI and HDMI standards. Factory or custom EDID tables are user selectable.
HDCP	Compliant with High-bandwidth Digital Content Protection (HDCP) using DVI and HDMI standards
Horizontal frequency	31 kHz to 100 kHz
Vertical frequency	24 Hz to 85 Hz
Resolution range	640x480 to 1920x1200, 480p, 576p, 720p, 1080i, or 1080p
Standards	DVI 1.0, HDMI, HDCP
Equalization	Automatic

Video processing — QEC I2HDMI

Maximum data rate	4.95 Gbps (1.65 Gbps per color)
Digital sampling	24 bit, 8 bits per color; 165 MHz standard
Colors	16.78 million

Video input — QEC I2SDI

Number/signal type	2 3G/HD/SD-SDI
Connectors	2 female HD-BNC (HD-BNC to female BNC adapters are included.)
Data rates	270 Mbps to 2.97 Gbps
Horizontal frequency	15 kHz to 100 kHz
Vertical frequency	23.98 Hz to 60 Hz
Resolution range	480i, 576i, 720p, 1080i, or 1080p
Formats	YCbCr digital component video
Return loss	<-15 dB @ 1 MHz to 1.5 GHz

Input cable equalization	Automatic for up to -30 dB of cable loss
3G-SDI	60 meters (200 feet) using Extron RG6 cable 45 meters (150 feet) using Extron RG59 cable
HD-SDI	120 meters (400 feet) using Extron RG6 cable 90 meters (300 feet) using Extron RG59 cable
SDI	150 meters (500 feet) using Extron RG6 cable 120 meters (400 feet) using Extron RG59 cable

NOTE: The transmission distance varies depending on the signal resolution and on the type of cable.

Standards	SMPTE 259M-C, SMPTE 292M, SMPTE 424M

Video processing — QEC I2SDI

Maximum data rate	2.97 Gbps
Digital sampling	24 bit, 8 bits per color
Colors	16.78 million

Video input — QGE 100 (remote hardware)

Number/signal type	1 analog VGA-UXGA or digital VGA-WUXGA RGBHV, RGBS, RGsB, single link DVI 1 analog or digital loop-through
Connectors	2 female DVI-I
Impedance	75 ohms
Horizontal frequency	31 kHz to 100 kHz
Vertical frequency	50 Hz to 85 Hz
Resolution range	640x480 to 1920x1200* *1920x1200 is accepted for DVI single link, reduced blanking only
Formats	RGB, digital video
Standards	DVI 1.0

Video processing — QGE 100 (remote hardware)

Maximum data rate	4.95 Gbps (1.65 Gbps per color)
Digital sampling	24 bit, 8 bits per color, 165 MHz standard
Colors	16.78 million

Sync — QGE 100 (remote hardware)

Input type	RGBHV, RGBS, RGsB
Input level	2.75 V to 5.0 Vp-p for RGBHV 0.3 Vp-p for RGsB
Impedance	2.2k ohms for H and V
Max. input voltage	5 Vp-p
Polarity	Positive or negative

Video processing — QEC O2

Maximum data rate	4.95 Gbps (1.65 Gbps per color)
Digital sampling	24 bit, 8 bits per color, 165 MHz standard
Colors	16.78 million

Video output — QEC O2

Number/signal type	2 scaled RGBHV or single link DVI
Connectors	2 female DVI-I (analog and digital signals are both active)
Nominal level	0.7 Vp-p for RGB
Minimum/maximum levels	0.0 V to 1.0 Vp-p
Impedance	75 ohms
Vertical frequencies	50 Hz, 60 Hz
Scaled resolution	640x480[1,2], 800x600[1,2], 848x480[1,2], 1024x768[1,2], 1152x870[1,2], 1280x768[1,2], 1280x800[1,2], 1280x1024[1,2], 1360x768[1,2], 1366x768[1,2], 1440x900[1,2], 1400x1050[1,2], 1408x1050[1,2], 1600x1200[1,2], 1680x1050[1,2], 1920x1200[1,2] HDTV: 720p[1,2], 1080p[1,2] [1] = at 50 Hz, [2] = at 60 Hz
Standards	DVI 1.0

Sync — QEC O2

Output type	RGBHV
Output level	2.4 Vp-p for RGBHV
Output impedance	2.2k ohms
Polarity	Positive or negative

Video processing — QEC O2HDMI

Maximum data rate	4.95 Gbps (1.65 Gbps per color)
Digital sampling	24 bit, 8 bits per color, 165 MHz standard
Colors	16.78 million

Video output — QEC O2HDMI

Number/signal type	2 scaled single link HDMI (HDCP compliant)
Connectors	2 female HDMI type A
Vertical frequency	50 Hz, 60 Hz
Scaled resolutions	640x480[1,2], 800x600[1,2], 848x480[1,2], 1024x768[1,2], 1152x870[1,2], 1280x768[1,2], 1280x800[1,2], 1280x1024[1,2], 1360x768[1,2], 1366x768[1,2], 1440x900[1,2], 1400x1050[1,2], 1408x1050[1,2], 1600x1200[1,2], 1680x1050[1,2], 1920x1200[1,2] HDTV: 720p[1,2], 1080p[1,2] [1] = at 50 Hz, [2] = at 60 Hz
Standards	DVI 1.0, HDMI, HDCP

Control/remote — processor/decoder/scaler

Ethernet ports	1 female RJ-45 connector for control, networked 2 female RJ-45 for media transfer (QGE 100 sources)
Ethernet data rate	Control port: 10/100Base-T, half/full duplex with autodetect
Quantum Elite 615	Media I and II ports: 10/100/1000Base-T, half/full duplex with autodetect
Quantum Elite 408	Media I: 10/100Base-T, half/full duplex with autodetect Media II: 10/100/1000Base-T, half/full duplex with autodetect
Ethernet protocol	
Control port	IP, TCP
Media ports	IP, TCP, UDP, DHCP
Ethernet default settings	
Control port	Link speed and duplex level = autodetected IP address = 192.168.254.254 Subnet mask = 255.255.0.0 Gateway = 0.0.0.0 DHCP = not supported
Media ports	Link speed and duplex level = autodetected Media I IP address = 192.168.254.252 Media II IP address = 192.168.254.253 Subnet mask = 255.255.0.0 Gateway = 0.0.0.0 DHCP = off

Storage

Quantum Elite 615	C drive: 512 MB, solid state drive D drive: 256 MB, solid state drive
Quantum Elite 408	80 GB (1 IDE drive partitioned for C and D drives)
Internal operating system	Microsoft® Windows® XP® embedded
Program control	Extron Quantum Elite control/configuration software for Windows

NOTE: The operating system is hard-coded into the Quantum Elite and Windows updates are not required. The C drive, which contains the operating system, is write protected to prevent unauthorized access.

Control/remote — setup and troubleshooting

Number/signal type

Quantum Elite 615	1 analog VGA-UXGA RGBHV local monitor 2 USB 1 PS/2 mouse 1 PS/2 keyboard
Quantum Elite 408	1 analog VGA-UXGA RGBHV local monitor 2 USB 1 PS/2 mouse and keyboard

Connectors

Quantum Elite 615	1 female 15-pin HD 2 USB type A 2 female PS/2 (6-pin mini DIN)
Quantum Elite 408	1 female 15-pin HD 2 USB type A 1 female PS/2 (6-pin mini DIN) (Breakout cable to 2 PS/2 connectors is included.)
USB standards	USB 2.0, low speed

General

Power supply

Quantum Elite 615	Internal Input: (2*) 100-240 VAC, 50-60 Hz power supplies *A redundant power supply is standard.
Quantum Elite 408	Internal Input: (1) 100-240 VAC, 50-60 Hz power supply
Power consumption	300-500 watts (varies with configuration)
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 85%, noncondensing Operating: +35 to +95 °F (5 to +35 °C) / 10% to 85%, noncondensing
Cooling	Fans, front to rear
Thermal dissipation	300-1350 BTU/hr (varies with configuration)

Mounting

Rack mount	Yes
Enclosure type	Metal

Enclosure dimensions (per unit)

Quantum Elite 615	10.5" H x 17.1" W x 19.3" D (6U high, full rack wide) (26.7 cm H x 43.3 cm W x 49.0 cm D) (Depth excludes connectors and handles. Width excludes built-in rack ears.)
Quantum Elite 408	7.0" H x 17.1" W x 19.3" D (4U high, full rack wide) (17.8 cm H x 43.3 cm W x 49.0 cm D) (Depth excludes connectors and handles. Width excludes built-in rack ears.)

Product weight

Quantum Elite 615	Without boards: 48 lbs (21.8 kg) Fully loaded: 56.7 lbs (25.7 kg)
Quantum Elite 408	Without boards: 36 lbs (16.3 kg) Fully loaded: 41.5 lbs (18.8 kg)
Boards	0.3 lb (0.6 kg)

Shipping weight	
Quantum Elite 615	Without boards: 60 lbs (27 kg) Fully loaded: 69 lbs (31 kg)
Quantum Elite 408	Without boards: 47 lbs (21 kg) Fully loaded: 53 lbs (24 kg)
Boards	2 lbs (1 kg) per board
Vibration	ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance	
Safety	CE, c-UL, UL, Korea KC Mark
EMI/EMC	CE, FCC Class A
Environmental	Complies with the appropriate requirements of RoHS, WEEE.
Warranty	3 years parts and labor

NOTE: All nominal levels are at ±10%.

NOTE: Specifications are subject to change without notice.

8.0-071513-D15